CLAIMS

1. A method of decreasing body weight in a patient, said method comprising administering a therapeutically effective amount of somatostatin or a somatostatin agonist to said patient.

2. A method of claim 1, wherein said method comprises administering a therapeutically effective amount of a somatostatin agonist to said patient.

3. A method of claim 2, wherein said somatostatin agonist is a somatostatin type-2 receptor agonist.

4. A method of claim 2, wherein said somatostatin agonist is a somatostatin type-5 receptor agonist.

5. A method of claim 3, wherein said somatostatin type-2 receptor agonist has a Ki of less than 2 nM for the somatostatin type-2 receptor.

6. A method of claim 4, wherein said somatostatin type-5 receptor agonist has a Ki of less than 2 nM for the somatostatin type-5 receptor.

7. A method of claim 2, wherein said somatostatin agonist is a somatostatin type-2 receptor selective agonist.

8. A method of claim 2, wherein said somatostatin agonist is a somatostatin type-5 receptor selective agonist.

9. A method of claim 7, wherein said somatostatin type-2 receptor selective agonist has a Ki for the somatostatin type-2 receptor that is at least 10 times less than the Ki for the somatostatin type-1, type-3, type-4, and type-5 receptors.

10. A method of claim 8, wherein said somatostatin type-5 receptor selective agonist has a Ki for the somatostatin type-5 receptor that is at least 10 times less than the Ki for the somatostatin type-1, type-2, type-3, and type-4 receptors.

11. A method of decreasing body weight in a patient, said method comprising administering a therapeutically effective amount of H-Cys-Phe-Phe-D-Trp-Lys-Thr-Phe-Cys-NH_2, wherein a disulfide bond exists between the free thiols of two Cys residues.

12. A method of claim 1, wherein said patient is an non-insulin-dependent diabetic human.

13. A method of claim 2, wherein said patient is an non-insulin-dependent diabetic human.

14. A method of claim 3, wherein said patient is an non-insulin-dependent diabetic human.

15. A method of claim 4, wherein said patient is an non-insulin-dependent diabetic human.

16. A method of claim 5, wherein said patient is an non-insulin-dependent diabetic human.

17. A method of claim 6, wherein said patient is an non-insulin-dependent diabetic human.

18. A method of claim 7, wherein said patient is an non-insulin-dependent diabetic human.

19. A method of claim 8, wherein said patient is an non-insulin-dependent diabetic human.

20. A method of claim 9, wherein said patient is an non-insulin-dependent diabetic human.

21. A method of claim 10, wherein said patient is an non-insulin-dependent diabetic human.

22. A method of claim 11, wherein said patient is an non-insulin-dependent diabetic human.

23. A method according to claim 1 wherein the somatostatin agonist is

H-D-β-Nal-Cys-Tyr-D-Trp-Lys-Thr-Cys-Thr-NH_2,

H-D-Phe-Cys-Phe-D-Trp-Lys-Thr-Cys-β-Nal-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Thr-Cys-β-Nal-NH_2,

H-D-β-Nal-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Thr-Pen-Thr-NH_2,

H-D-Phe-Cys-Phe-D-Trp-Lys-Thr-Pen-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Thr-Pen-Thr-OH,

H-D-Phe-Cys-Phe-D-Trp-Lys-Thr-Pen-Thr-OH,

H-Gly-Pen-Phe-D-Trp-Lys-Thr-Cys-Thr-OH,

H-Phe-Pen-Tyr-D-Trp-Lys-Thr-Cys-Thr-OH,

H-Phe-Pen-Phe-D-Trp-Lys-Thr-Pen-Thr-OH,

H-D-Phe-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-ol

H-D-Phe-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

H-D-Trp-Cys-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-D-Trp-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-Trp-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

Ac-D-Phe-Lys*-Tyr-D-Trp-Lys-Val-Asp-Thr-NH_2 (an amide bridge formed between Lys* and Asp),

Ac-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(Bu)-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(Et)$_2$-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-L-hArg(Et)$_2$-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Phe-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NHEt,

Ac-L-hArg(CH_2-CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys(Me)-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys(Me)-Thr-Cys-Thr-NHEt,

Ac-hArg(CH_3, hexyl)-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

H-hArg(hexyl$_2$)-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NHEt,

Ac-D-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Phe-NH_2,

Propionyl-D-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys(iPr)-Thr-Cys-Thr-NH_2,

Ac-D-β-Nal-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Gly-hArg(Et)$_2$-NH_2,

Ac-D-Lys(iPr)-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-D-hArg(CH_2CF_3)$_2$-D-hArg(CH_2CF_3)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Phe-NH_2,

Ac-D-hArg(Et)$_2$-D-hArg(Et)$_2$-Gly-Cys-Phe-D-Trp-Lys-Thr-Cys-Thr-NH_2,

Ac-Cys-Lys-Asn-4-Cl-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-Ser-D-Cys-NH_2,

H-Bmp-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-Bmp-Tyr-D-Trp-Lys-Val-Cys-Phe-NH_2,

H-Bmp-Tyr-D-Trp-Lys-Val-Cys-p-Cl-Phe-NH_2,

H-Bmp-Tyr-D-Trp-Lys-Val-Cys-β-Nal-NH_2,

H-D-β-Nal-Cys-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Abu-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Abu-Cys-β-Nal-NH_2,

H-pentafluoro-D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-Thr-NH_2,

Ac-D-β-Nal-Cys-pentafluoro-Phe-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-D-β-Nal-Cys-Tyr-D-Trp-Lys-Val-Cys-β-Nal-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-β-Nal-NH_2,

H-D-β-Nal-Cys-Tyr-D-Trp-Lys-Abu-Cys-Thr-NH_2,

H-D-p-Cl-Phe-Cys-Tyr-D-Trp-Lys-Abu-Cys-Thr-NH_2,

Ac-D-p-Cl-Phe-Cys-Tyr-D-Trp-Lys-Abu-Cys-Thr-NH_2,

H-D-Phe-Cys-β-Nal-D-Trp-Lys-Val-Cys-Thr-NH_2,

H-D-Phe-Cys-Tyr-D-Trp-Lys-Cys-Thr-NH_2,

cyclo(Pro-Phe-D-Trp-N-Me-Lys-Thr-Phe),

cyclo(Pro-Phe-D-Trp-N-Me-Lys-Thr-Phe),

cyclo(Pro-Phe-D-Trp-Lys-Thr-N-Me-Phe),

cyclo(N-Me-Ala-Tyr-D-Trp-Lys-Thr-Phe),

cyclo(Pro-Tyr-D-Trp-Lys-Thr-Phe),

cyclo(Pro-Phe-D-Trp-Lys-Thr-Phe),

cyclo(Pro-Phe-L-Trp-Lys-Thr-Phe),

cyclo(Pro-Phe-D-Trp(F)-Lys-Thr-Phe),

cyclo(Pro-Phe-Trp(F)-Lys-Thr-Phe),

cyclo(Pro-Phe-D-Trp-Lys-Ser-Phe),

cyclo(Pro-Phe-D-Trp-Lys-Thr-p-Cl-Phe),

cyclo(D-Ala-N-Me-D-Phe-D-Thr-D-Lys-Trp-D-Phe),

cyclo(D-Ala-N-Me-D-Phe-D-Val-Lys-D-Trp-D-Phe),

cyclo(D-Ala-N-Me-D-Phe-D-Thr-Lys-D-Trp-D-Phe),

cyclo(D-Abu-N-Me-D-Phe-D-Val-Lys-D-Trp-D-Tyr),

cyclo(Pro-Tyr-D-Trp-t-4-AchxAla-Thr-Phe),

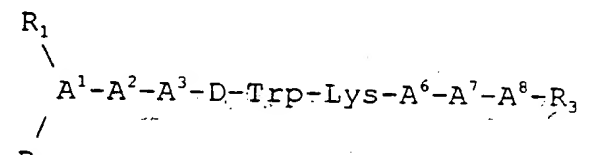
cyclo(Pro-Phe-D-Trp-t-4-AchxAla-Thr-Phe),

cyclo(N-Me-Ala-Tyr-D-Trp-Lys-Val-Phe),

cyclo(N-Me-Ala-Tyr-D-Trp-t-4-AchxAla-Thr-Phe),
cyclo(Pro-Tyr-D-Trp-4-Amphe-Thr-Phe),
cyclo(Pro-Phe-D-Trp-4-Amphe-Thr-Phe),
cyclo(N-Me-Ala-Tyr-D-Trp-4-Amphe-Thr-Phe),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba-Gaba),
cyclo(Asn-Phe-D-Trp-Lys-Thr-Phe),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-$NH(CH_2)_4CO$),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-β-Ala),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-D-Glu)-OH,
cyclo(Phe-Phe-D-Trp-Lys-Thr-Phe),
cyclo(Phe-Phe-D-Trp-Lys-Thr-Phe-Gly),
cyclo(Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Gly),
cyclo(Asn-Phe-Phe-D-Trp(F)-Lys-Thr-Phe-Gaba),
cyclo(Asn-Phe-Phe-D-Trp(NO_2)-Lys-Thr-Phe-Gaba),
cyclo(Asn-Phe-Phe-Trp(Br)-Lys-Thr-Phe-Gaba),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Phe(I)-Gaba),
cyclo(Asn-Phe-Phe-D-Trp-Lys-Thr-Tyr(But)-Gaba),
cyclo(Bmp-Lys-Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-Pro-Cys)-OH,
cyclo(Bmp-Lys-Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-Pro-Cys)-OH,
cyclo(Bmp-Lys-Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-Tpo-Cys)-OH,
cyclo(Bmp-Lys-Asn-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-MeLeu-Cys)-OH,
cyclo(Phe-Phe-D-Trp-Lys-Thr-Phe-Phe-Gaba),
cyclo(Phe-Phe-D-Trp-Lys-Thr-Phe-D-Phe-Gaba),
cyclo(Phe-Phe-D-Trp(5F)-Lys-Thr-Phe-Phe-Gaba),

cyclo(Asn-Phe-Phe-D-Trp-Lys(Ac)-Thr-Phe-NH-$(CH_2)_3$-CO),
cyclo(Lys-Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba),
cyclo(Lys-Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba),
cyclo(Orn-Phe-Phe-D-Trp-Lys-Thr-Phe-Gaba),
H-Cys-Phe-Phe-D-Trp-Lys-Thr-Phe-Cys-NH_2 ,
H-Cys-Phe-Phe-D-Trp-Lys-Ser-Phe-Cys-NH_2 ,
H-Cys-Phe-Tyr-D-Trp-Lys-Thr-Phe-Cys-NH_2 or
H-Cys-Phe-Tyr(I)-D-Trp-Lys-Thr-Phe-Cys-NH_2 .

24. A method according to claim 1 wherein the somatostatin agonist is



wherein

A^1 is a D- or L- isomer of Ala, Leu, Ile, Val, Nle, Thr, Ser, β-Nal, β-Pal, Trp, Phe, 2,4-dichloro-Phe, pentafluoro-Phe, p-X-Phe, or o-X-Phe, wherein X is CH_3, Cl, Br, F, OH, OCH_3 or NO_2;

A^2 is Ala, Leu, Ile, Val, Nle, Phe, β-Nal, pyridyl-Ala, Trp, 2,4-dichloro-Phe, pentafluoro-Phe, o-X-Phe, or p-X-Phe, wherein X is CH_3, Cl, Br, F, OH, OCH_3 or NO_2;

A^3 is pyridyl-Ala, Trp, Phe, β-Nal, 2,4-dichloro-Phe, pentafluoro-Phe, o-X-Phe, or p-X-Phe, wherein X is CH_3, Cl, Br, F, OH, OCH_3 or NO_2;

A^6 is Val, Ala, Leu, Ile, Nle, Thr, Abu, or Ser;

A^7 is Ala, Leu, Ile, Val, Nle, Phe, β-Nal, pyridyl-Ala, Trp, 2,4-dichloro-Phe, pentafluoro-Phe, o-X-Phe, or p-X-Phe, wherein X is CH_3, Cl, Br, F, OH, OCH_3 or NO_2;

A^8 is a D- or L-isomer of Ala, Leu, Ile, Val, Nle, Thr, Ser, Phe, β-Nal, pyridyl-Ala, Trp, 2,4-dichloro-Phe, pentafluoro-Phe, p-X-Phe, or o-X-Phe, wherein X is CH_3, Cl, Br, F, OH, OCH_3 or NO_2;

each R_1 and R_2, independently, is H, lower acyl or lower alkyl; and R_3 is OH or NH_2; provided that at least one of A^1 and A^8 and one of A^2 and A^7 must be an aromatic amino acid; and further provided that A^1, A^2, A^7 and A^8 cannot all be aromatic amino acids.

25. A method according to claim 24 wherein the linear somatostatin agonist is

H-D-Phe-p-chloro-Phe-Tyr-D-Trp-Lys-Thr-Phe-Thr-NH_2,

H-D-Phe-p-NO_2-Phe-Tyr-D-Trp-Lys-Val-Phe-Thr-NH_2,

H-D-Nal-p-chloro-Phe-Tyr-D-Trp-Lys-Val-Phe-Thr-NH_2,

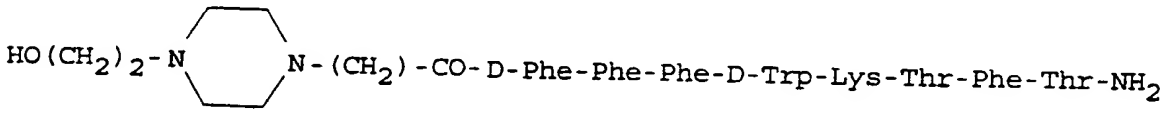
H-D-Phe-Phe-Phe-D-Trp-Lys-Thr-Phe-Thr-NH_2 ,

H-D-Phe-Phe-Tyr-D-Trp-Lys-Val-Phe-Thr-NH_2,

H-D-Phe-p-chloro-Phe-Tyr-D-Trp-Lys-Val-Phe-Thr-NH_2 or

H-D-Phe-Ala-Tyr-D-Trp-Lys-Val-Ala-β-D-Nal-NH_2.

26. A method according to claim 1 wherein the somatostatin agonist is



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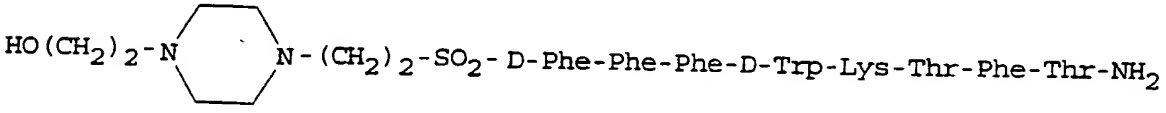

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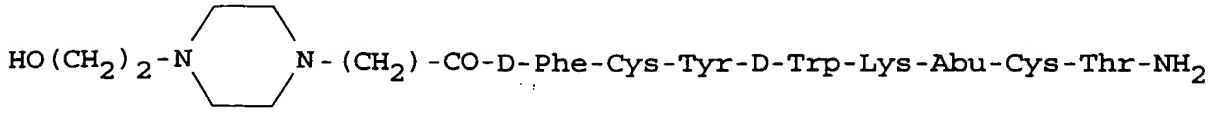
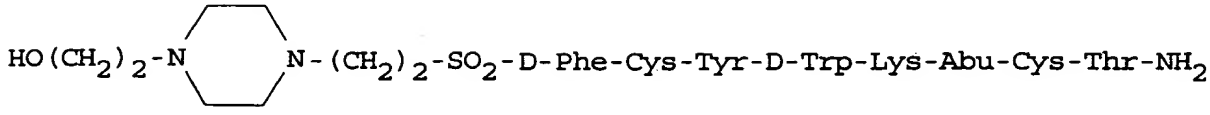


or



27. A method according to claim 1 wherein said patient is obese.

28. A method according to claim 3 wherein said patient is obese.

29. A method according to claim 4 wherein said patient is obese.

30. A method according to claim 7 wherein said patient is obese.

31. A method according to claim 8 wherein said patient is obese.

32. A method according to claim 11 wherein said patient is obese.

33. A pharmaceutical or cosmetic composition comprising a therapeutically or cosmetically effective amount of somatostatin; or a somatostatin agonist; or H-Cys-Phe-Phe-D-Trp-Lys-Thr-Phe-Cys-NH_2 wherein a disulfide bond exists between the free thiols of the two Cys residues.

34. A pharmaceutical composition as claimed in claim 33 having the features identified in any one of claims 3 to 10 and 23 to 26.

35. Use of a somatostatin, or a somatostatin agonist; or H-Cys-Phe-Phe-D-Trp-Lys-Thr-Phe-Cys-NH_2 wherein a disulfide bond exists between the free thiols of the two Cys residues, in the formulation of a pharmaceutical or cosmetic composition for use in reducing excessive body weight in a human or mammalian animal.

36. Use of a somatostatin, or a somatostatin agonist according to claim 35, wherein said somatostatin or somatostatin agonist has the relevant features identified in any one of claims 3 to 10 and 23 to 26.

37. A pharmaceutical composition substantially as hereinbefore described with reference to the Examples.